Environmental Health Coalition

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March 23, 2005

Chairman John Minan and Regional Board Members
California Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, California 92123-4340

RE: Comments on NPDES Nos. CA0108073 and CA0108181, Tentative Orders No. R9-2005-0005 and R9-2005-0006, Southern California Edison San Onofre Nuclear Generating Stations (SONGS) Units 2 and 3

Dear Chairman Minan and Board Members:

Environmental Health Coalition ("EHC") and the Nuclear Information and Resource Service ("NIRS"), are writing to submit additional comments on Tentative Orders No. R9-2005-0005 and R9-2005-0006 for the San Onofre Nuclear Generating Station ("SONGS"). We appreciate the Board's extension of the comment period for these Tentative Orders and this letter will raise additional issues of concern regarding the adoption of the permit. Please note that EHC also signed on to the March 22, 2005 San Diego Bay Council ("Bay Council") letter which comments on specific issues regarding the discharge permit.

This comment letter will focus on three general issues:

1. monitoring of radioactive waste in the water discharge;

2. the history of incidents at the SONGS reactors that demonstrate a need to adopt stringent permits that fully protect water quality and beneficial uses; and

3. a response to a question asked by a Board member at the March 9th hearing if it is typical to adopt permits with more information than provided in the Tentative Orders for SONGS.

Comments

A. Monitoring of Radioactive Waste in Water Discharge

At the March 9, 2005 public hearing, members of Bay Council pointed out that the Tentative Orders do not require any monitoring in the effluent for radioactive material. The Board Staff cited jurisdictional issues with the Nuclear Regulatory

Commission ("NRC") in the Tentative Orders. Bay Council argued that monitoring radioactive material in the discharge did not amount to regulating it, but instead provided the public with crucial information as to the safety of the discharge waters. As many surfers testified, one of their main concerns was whether there was any radioactive waste in the waters they utilized. Representatives from Southern California Edison ("SCE") testified that there was no need to include any monitoring for radioactive waste in the Tentative Orders simply because the NRC already collected that information and made it easily accessible to the public.

A close examination of NRC's monitoring for radioactive effluent, however, reveals a monitoring program that does not serve the public's interest to know what radioactive material is in SONGS's effluent. NRC receives and reviews SONGS self-monitoring data of radioactive effluent.[1] The radioactive effluent is monitored by a "set point alarm system" established to the permissible limits defined under federal regulations.[2] Under this system, routine releases of radioactive effluent only sound an alarm, thus requiring monitoring, if radioactivity levels exceed the established set point. As a result, the required monitoring of radioactive effluent by the NRC is only triggered if a threshold limit is exceeded. In the case of SONGS, the up to 2.5 billion gallon per day reactor coolant discharge provides a tremendous dilution factor to mask radioactivity that may be routinely released into the Pacific Ocean. Furthermore, the filtering and accurate monitoring of radioactive hydrogen (tritium) and noble gases (such as radioactive krypton and xenon which decay to radioactive strontium and cesium) are not monitored. As a result, the "permissible" levels of discharge do not mean safe levels for marine environments, the biota, and public health. Furthermore, NRC's self-reporting monitoring falls far short of fully informing the public about the content of radioactive material in the plant's water discharge.

We believe it is clear that there is a strong public interest in knowing if there is any radioactive material in water discharges from SONGS. Requiring monitoring in these Tentative Orders for radioactive material in the discharge is reasonable, and does not impose any undue burden upon the discharger. To the contrary, monitoring for radioactive materials would only further the public's right-to-know what is contained in the plant's discharge.

B. History of Incidents at SONGS Reactors Demonstrate a Need to Adopt a Stringent Permit that Fully Protects Beneficial Uses

At the March 9, 2005 hearing on the SONGS Tentative Orders, SCE testified that SONGS had an excellent track record of operation and that not much has changed in the operation of the plant since its last permit was issued. However, a simple search of recent news articles tell a different story. The series of "incidents" at SONGS demonstrate that it is clear the plant is aging and more oversight and monitoring is needed. Below is a

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[1] *See* 10 CFR Part 50.36(a), requiring that radioactive effluent (airborne and liquid) discharges released by nuclear power stations be self-reported by the discharger to the NRC.

[2] Radioactive discharges (airborne and liquid) are regulated through 10 CFR Part 20. Part 20 permits the release of radioactive isotopes up to limits established under the rule.

partial listing assembled by local SONGS community gwatchdog groups of some key incidents at the plant since 2001 that pose a threat to water quality and beneficial uses:

- June 6, 2001: Workers overfill a 300-gallon steel bin with hydrazine, a toxic chemical used to purify water in the plant's cooling systems, spilling about 20 gallons. (San Diego Union-Tribune)

- October 13, 2001: Unit 2 is shut down for approximately 20 days for repairs to cracks in the reactor vessel. (North County Times)

- June 21-27, 2002: Five families of SONGS workers who have died from rare forms of cancer sue SCE for failing to disclose radiation leaks at the plant. (Orange County Weekly)

- September 26 – October 2, 2003: SONGS is ranked 3rd among facilities nationwide "most likely to suffer a meltdown" according to the Union of Concerned Scientists. According to the group, the risk is in part due to design defects in the sump pump system. UCS reports that there is potential for debris to clog the screen on the containment-vessel sump. Such a clog could prevent water from being pumped through the reactor core, causing the reactor's fuel rods to overheat and melt down. On August 1, 2003, SCE promises to have workers trained by November 30th to clean the drains. Scott Burnell, public affairs officer for the NRC, describes the containment sump-pump issue as "a credible one." (Orange County Weekly)

- January 29, 2004: It is reported that Unit 2 leaks 144 gallons per day. The leaks are traced to a 2-inch diameter steel pipe that is part of a system of pipes that "purifies and recycles" water. (North County Times)

- March 31, 2004: It is reported that "two failed water temperature sensors have forced operators to shut down SONGS Unit 2 reactor before it could reach full power after a 45-day refueling and maintenance outage, a plant spokesman said Wednesday." Article reports that all day every day, 560-degree reactor coolant is pumped through the tubes under 2,250 pounds of pressure per square inch. Although the plant's steam generators were designed to last 40 years, inspectors began detecting cracks in the thin coolant tubes only 10 years after Units 2 and 3 came into service in 1983 and 1984, respectively. Furthermore, it is reported that SCE had to plug 1,899 of Unit 2's tubes and another 534 have been repaired by inserting protective metal sleeves. All told, 10 % of Unit 2's and 6.5% of Unit 3's steam generator tubes are out of service at the time the report was filed. (North County Times)

- December 2, 2004: It is reported that Unit 3 will remain shut down through mid-January after cracks are discovered in two of its water heaters. Unit 3 was offline since September 26, 2004 for a 55-day refueling when small cracks were found in the water heater sleeves attached to the pressurizers. The 30 heaters "regulate the

nuclear reactor's coolant to ensure the water inside the reactor's coil does not boil." (North County Times and San Diego Union-Tribune)

- February 16, 2005: For the third time in 3 months, Unit 2 is shut down. This time, the shutdown was initiated due to a "faulty water valve." The valve was 18 inches in diameter and original equipment (1982). (San Diego Union-Tribune)

We are not suggesting that any of these specific incidents directly resulted in an adverse impact on beneficial uses. However, given the sheer size of this plant's discharge, the complexity of the facility, the inherent risks of nuclear power generation, and the long track record of "problems" at the plant, we strongly encourage this Board to fully evaluate the effectiveness of the permit to ensure compliance with environmental laws and to address the lack of detailed information about the facility, including the intake and discharge infrastructures, the fish return system, the steam condenser alloys, and benthic studies, so that the Board can render an informed decision.

C. Recent Permit Issued for South Bay Power Plant Set the Standard for What Information Should Be Provided in the Permit and to the Public Regarding Environmental Impacts of Operation

We wish to respond to a question asked by a Board member at the March 9th hearing if it is typical to adopt permits with more information than provided in the Tentative Orders for SONGS 2 and 3. The South Bay Power Plant ("SBPP") NPDES permit[3] contained exhaustive information about the facility including the intake and discharge infrastructures, the fish return system, the steam condenser alloys, benthic studies, and environmental impacts. For reference, the SBPP was permitted to take in up to 600 million gallons per day, whereas SONGS is permitted to take in up to 2.4 *billion* gallons per day, so the impacts would presumably be greater for SONGS. These findings made in the SBPP permit were important because they provided key information to the public, as well as to Board Members when they deliberated on the permit itself. We also believe that this level of information should be a standard feature of all permits and is not in the Tentative Orders for SONGS. The following findings that were adopted in the permit show the level of detail in the SBPP permit (there were many more made, but these are just a few of the key findings):

- "The combined effects of total residual chlorine, chlorinated organic compounds, copper, and other trace metals contained in the SBPP cooling water discharge may cause or contribute to a violation of the narrative toxicity objective stated in the Basin Plan. The average survival rate of test species exposed to the SBPP discharge ranges from 90 to 100 percent;"[4]

- "The biotic communities in the immediate vicinity of the discharge point and in the discharge channel have been degraded by exposure to the once-

[3] Order No. R9-2004-0154, NPDES Permit No. CA0001368. Adopted on November 10, 2004.
[4] *Id.* at page 2, Finding #8.

through-cooling water discharge from SBPP. The degradation to the biotic communities is due to several factors, including elevated temperature, flow volume, and flow velocity;"[5]

- "Pursuant to CWA Section 316(a) the existing thermal discharge limitations applicable to the SBPP discharge are not more stringent then necessary for protection and propagation of a "balanced indigenous community" within the discharge channel. These thermal limitations, however, do not fully ensure water quality needed for attainment of beneficial uses of south San Diego Bay as required by the Basin Plan and State Thermal Plan. The SBPP discharge channel exhibits lower overall diversity of benthic invertebrates and the absence of certain indigenous invertebrate species. Furthermore, up to 104 acres of eelgrass habitat (critical to the protection and propagation of indigenous communities) have been precluded from the discharge channel and other areas of South San Diego Bay due to the redistribution of turbidity in the Bay from the SBPP discharge. Measures to abate the detrimental impacts of the SBPP discharge channel are needed. Measures to restore the Beneficial Uses of south San Diego Bay and to rehabilitate the damage caused to the biological resources of the Bay are also necessary;"[6] and

- "As indicated in the technical study report titled "*SBPP Cooling Water System Effects on San Diego Bay, Volume II: Compliance with Section 316(b) of the Clean Water Act for South Bay Power Plant, August 2004*" submitted by Duke Energy, approximately 27 percent of the goby complex and 50 percent of the longjaw mudsucker larval source water populations are lost annually due to entrainment in the SBPP. Furthermore, approximately 13 percent of equivalent adult anchovy and 15 percent equivalent adult silverside fish populations are also lost annually due to larval entrainment losses. These losses of larval and adult fish populations due to entrainment in the SBPP constitute a significant adverse environmental impact."[7]

Conclusion

We appreciate the opportunity to comment on these Tentative Orders. Given the sheer size and great public interest in this discharge permit, we urge the Board to defer any immediate action in the adoption of these Orders until the significant gaps in key information regarding environmental impacts are included to justify its adoption, and the public has had a chance to review that information and to provide meaningful input.

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[5] *Id* at page 4, Finding #14.
[6] *Id* at page 5, Finding #19.
[7] *Id* at page 5, Finding #20.

Sincerely,

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